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AUTHOR Rounds, James B., Jr.; Zevon, Michael A.
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ABSTRACT

High levels of stress experienced by primary care oncology nursing staff, and the competency impairment which results from such stress, has become a matter of much concern in health care settings. This study was conducted to identify the coping strategies employed by oncology nurses, and to relate these strategies to differential indices of stress and burnout. Oncology nurses (N=133) at a comprehensive cancer center completed the Ways of Coping (WC) Checklist, the Job-Related Tension Index, the Emotional Exhaustion Scale, the Role Conflict scale, the Job Involvement scale, and the Home-Work Conflict scale. The Job Involvement scale showed a clear and positive relationship to five of the eight WC scales (Self-Controlling, Seeking Social Support, Accepting Responsibility, Planful Problem-Solving, and Positive Reappraisal), all of which contained coping responses characterized by constructive engagement. Role conflict, stress, and burnout indices were most strongly and positively associated with the WC scales of Confrontive Coping, Distancing, Accepting Responsibility, and Escape-Avoidance scales, and negatively associated with the Planful Problem-Solving scale. Type of coping response was differentially related to the level of reported stress and burnout. Increased use of emotional-focused coping responses was related to increased reports of stress and burnout. (NB)

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Differential Effectiveness of Coping in Managing Stress and Burnout in Oncology Nurses

James B. Rounds

Roswell Park Memorial Institute

and

State University of New York at Buffalo

Michael A. Zevon

Roswell Park Memorial Institute

CG 020304

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Differential Effectiveness of Coping in Managing Stress and Burnout in Oncology Nurses

A sizable literature, both theoretical and empirical, has emerged, discussing the antecedents and consequences of stress among nursing and health related professionals in hospitals. Several factors make hospital staff especially vulnerable to continued stress on the job. One such factor is the stress resulting from the job itself (Seuntjens, 1982). Nurses must often do demanding physical work, especially in intensive care settings. Often the job is unpleasant, having to do with noxious stimuli (Marshall, 1980). In some cases, dramatic changes in the patient's status can occur quickly and with a minimum of advanced warning. As many laboratory studies show, this lack of predictability has been shown to produce tension and stress, and decreased performance (see Miller, 1980). Finally, the round the clock schedule of nursing care can result in atypical and shifting work hours, which may disrupt the private lives of staff.

The relationship between staff and patient can also be a source of stress. Patient expectations about appropriate roles for themselves and for the staff may be contrary to the staff's expectations--potentially creating stressful conflicts (Brickman, Rabinowitz, Karuza, Coates, Cohn & Kidder, 1982). The severity of the patient's disease and poor prognosis associated with advanced stages of cancer (which are more likely in a referral cancer hospital) can be stressful (Glasser & Strauss, 1968; Sudnow, 1967).

Finally, organizational climate and professional relationships have been implicated as important contributors to stress (Seuntjens, 1982). Especially noteworthy are the negative effects of role ambiguity and role conflict on staff satisfaction and performance (e.g., Brief & Aldag, 1976; Pines, 1982; Posner & Randolph, 1980). Other research has found that poor staff relations, poor communications, and poor staff supervisory relationships also contribute to job dissatisfaction, and anxiety (e.g., Longest, 1974; Pines & Kafry, 1978; Seybolt, Pavett & Walker, 1978).

Stress on the job has been found to lead directly and indirectly to many harmful effects for the staff, the patients and the organization. As was pointed out above, job stress and tension have been found to be strongly related to job dissatisfaction and "burnout". Burnout is defined as a response to the stress of having work demands and threats exceed an individual's endurance. The symptoms of burnout are emotional and physical depletion, a feeling of failure, withdrawal from patients, and a feeling that "one cannot take it anymore" (Pines, 1982). Burnout and decreased job satisfaction have been linked to higher rates of staff turnover (Longest, 1974; Seybolt, 1982).

Given the expectations surrounding the nursing profession, common coping mechanisms (e.g., emotional release) are not often available (Marshall, 1980). Furthermore, the staff may use less adaptive coping mechanisms such as denial, (see Folkman, 1984). If nurses feel that their stress and decreased job satisfaction are inappropriate, given their professional role, then the very consciousness of having stress may be itself stressful. Despite the restriction in coping responses imposed on nurses by their professional roles, nurses do cope with the stress associated with their jobs. The task for medical psychology is to identify coping responses that are more or less

adaptive, and to use this information in designing interventions.

In addition to managing the challenges basic to nursing, oncology nurses must also deal with the stress associated with caring for patients with a life threatening disease. The high levels of stress experienced by primary care oncology nursing staff, and the competency impairment which results from such stress and its accompanying emotional exhaustion, has become a matter of increasing concern, in health care settings. Despite this concern, few studies have evaluated the effectiveness of specific coping strategies in managing stress and burnout among oncology nurses. The present study sought to identify the coping strategies employed by a sample of oncology nurses, and to relate these strategies to differential indices of stress and burnout.

Method

Subjects

One hundred and thirty-three oncology nurses (126 females and 7 males) employed at a major comprehensive cancer center participated in the present study. The mean age of the nurses was 32.6 years (SD=7.8); they had been Registered Nurses for an average of 8.6 years (SD=7.6); and they had worked an average of 6.6 (SD=5.4) years at the center.

Measures

The Ways of Coping Checklist (WC; Lazarus & Folkman, 1984) is a 66-item measure designed to assess eight coping strategies in response to a specific stressor, in this case the stress they experienced as a result of their work. The WC items were initially scored using a set of scales derived from a factor analysis of a community sample (see Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, undated). These eight scales are labeled (number of items in parenthesis): Confrontive Coping (6), Distancing (6), Self-Controlling (7), Seeking Social Support (6), Accepting Responsibility (4), Escape-Avoidance (8), Planful Problem-Solving (6), and Positive Reappraisal (7). In addition, three scales were developed within the present investigation based on factor analysis of the WC items.

The Job-Related Tension Index (JTI; Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964), a 15-item Likert-format scale, is a global measure of tension experienced in connection with work. The items cover a wide variety of job-relevant problems such as role conflict and ambiguity and work overload. Respondents are asked to indicate the degree to which they are concerned about each of the problems by choosing one of five responses (never, rarely, sometimes, often, nearly all the time). The overall job tension score ranges from 15 to 75 with higher scores indicating greater tension. Internal consistency estimates of the JTI range from .73 to .87 (Abush & Burkhead, 1984).

The Emotional Exhaustion Scale (EXS) of the Maslack Burnout Inventory (Maslach & Jackson, 1981) consists of nine items which describe feelings of being emotionally overextended and exhausted by one's work. Respondents receive two scores--a frequency and intensity score--which reflect how often the feeling is experienced and the strength of the emotional experience, respectively. Only the frequency score was calculated.

The Role Conflict scale (RC; Rizzo, House, & Lirtzman, 1970) is a four-item measure of the incongruency or incompatibility in organizational roles. The RC scale assesses conflict between: a) the person's time, resources, or capabilities and the defined role behavior; c) person's interrole behaviors, i.e., role overload; and d) expectations and organizational demands in the form of incompatible policies. Items were scored on a five-point scale ranging from 1 = never occurs to 5 = occurs constantly.

The Job Involvement scale (INV; Lodahl & Kejner, 1965) is a six-item measure of how involved an individual is with work and his or her job. An individual responses to the items on a seven-point scale (1 = strongly disagree to 7 = strongly agree).

The Home-Work Conflict scale (HW; Donnelly, Zevon, & Droz, 1984) assesses the conflicting demands between work and personal life. The four items are responded to on the identical Likert format used for the Role Conflict scale.

Procedure

The nurses were administered the measures in a group format during an inservice training program at the center.

Results

Ways of Coping Checklist (WC) Analysis

Table 1 shows the means, standard deviations, and the intercorrelations of the WC scales. As shown in the diagonal of this Table 1, the alpha coefficients range from .45 for the Confrontive Coping scale to .76 for the Escape-Avoidance scale. These low internal consistency values are not surprising given the number of items in the scales (scales vary in length from 4 to 8 items), and are similar to those reported by Folkman and Lazarus (Ways of Coping, 1985). A number of the correlations among the WC scales indicated a substantial overlap in the use of these coping responses. For example, the Seeking Social Support scale and the Planful Problem-Solving scale correlated .54, which is not unexpected, since the Seeking Social Support scale seems to include items reflecting planful problem-solving in a social context (e.g., "Talked to someone to find out more about the situation", "Talked to someone who could do something concrete about the problem"). Some of the relationships among the WC scales are difficult to explain. For example, the correlation between the Accepting Responsibility scale and the Escape-Avoidance scale is .60, a strength of association that is difficult to understand given the content of these scales. Given the considerable overlap among these WC scales, we decided to examine the structure of coping responses within the present sample by submitting the item intercorrelation matrix to a factor analysis. The item correlation matrix was analyzed by a principle factors technique with squared multiple correlations as communality estimates and rotation to a varimax criterion. We chose an orthogonal instead of an oblique rotation, unlike Folkman's prior work, since it was important to partition the total common variance into independent variance components for subsequent regression analyses.

Insert Table 1 about here

Eigenvalues for one through eight factors were 9.77, 6.41, 2.77, 2.50, 2.31, 2.13, 2.02, and 1.92, respectively. Trial rotations with the varimax criteria of three through eight factors indicated that a two-factor solution provided the most interpretable structure. In these trial rotations, a residual factor was found for the four-factor solution. A residual factor was defined for this study as one for which fewer than four loadings could meet the joint condition of being equal to or greater than the absolute value of .35 and the highest loading for an item.

Insert Table 2 about here

As shown in Table 2, Factor 1 through Factor 3 were defined by 29, 18, and 7 items, respectively, with factor loadings $\geq .35$ and loadings of $\leq .30$ on the irrelevant factor. Twelve of the WC items did not have factor loadings of $\geq .35$ on the three factors.

For Factor 1, the salient WC items reflected desires for a change in the stressful situation and refusal to acknowledge stress-related feelings and thoughts. In comparison to the item content of the WC scales, 5 of the 6 items from the Distancing scale, 7 of the 8 items from the Escape-Avoidance scale, and all 4 of the items from the Accepting Responsibility scale had salient loadings on Factor 1. On the other hand, Factor 2 had high loading on items that refer to information and advice seeking and problem solving behaviors. The salient items on Factor 2 were primarily drawn from the WC Planful Problem-Solving scale (5 of 6 items), Seeking Social Support scale (5 of 6 items), and the Positive Reappraisal scale (4 of 7 items). Factor 1 and Factor 2 are very similar to Lazarus and Folkman's (1984) distinction between coping responses that alter the emotional response to the stressor, and those that alter the stressful situation. These two functions of coping have been referred to as, respectively, problem-focused coping and emotion-focused coping (for similar concepts, see George, 1974; Murphy, 1974; and Mechanic, 1962). (Thus, Factor 1 is labeled Emotion-Focused Coping and Factor 2 is labeled Problem-Focused Coping). Finally, Factor 3, which accounts for substantially less of the common variance, seems to be an emotional expressive factor. Three of the six items from the Confrontive Coping scale had salient loadings on Factor 3. (Factor 3 is labeled Emotional Expressive Coping).

Correlation Analysis

Table 3 reports the correlations of the WC Scales and the job involvement, role conflict, stress and burnout indices. The job involvement scale showed a clear and positive relationship to five of the WC scales (Self-Controlling, Seeking Social Support, Accepting Responsibility, Planful Problem-Solving, and Positive Reappraisal), all coping responses characterized by constructive engagement. In contrast, the role conflict, stress, and burnout indices were most strongly and positively associated with the Confrontive Coping, Distancing, Accepting Responsibility, and Escape-Avoidance scales, and negatively associated with the Planful Problem-Solving scale. Only the Accepting Responsibility scale was related, in the same direction, to the job involvement index and the stress and burnout indices; its relationship, however, was the weakest of those WC scales with significant positive relationships to the stress and burnout indices.

Insert Table 3 about here

Table 3 also shows the correlation of the factor-based coping scales and the job involvement, role conflict, stress, and burnout indices. Strikingly, the Emotional Expressive Coping factor was significantly and negatively, related to the role conflict, stress, and burnout indices. It seems that the more the nurses expressed their feelings concerning the stressful aspects of their job, the less they reported role conflict, stress, and burnout associated with their job. For Factor 1 and Factor 2, only the Emotion-Focused Coping factor and the EXS scale was significantly related.

Regression Analysis

A hierarchical multiple regression analysis was used to examine the independent influence of the coping responses on stress and burnout. The WC scales were sorted into sets based on their structural interrelationships indicated by the WC-item factor analytic results. Designated as Set 1, the WC scales with the majority of their items loading on the Problem-Focused Coping factor included the Planful Problem-Solving, Seeking Social Support, and the Positive Reappraisal scales. Set 2 included the scales of Distancing, Accepting Responsibility, and Escape-Avoidance. Finally, the scales of Confrontive Coping and Self-Controlling which did not map onto the factor analytic results were placed in Set 3. Since we did not have a model explaining how the coping responses influence stress and burnout, the amount of variance or the contribution of each set was appraised after partialling the varianced accounted for by all remaining sets.

Insert Table 4 about here

Results from the regression analysis are shown in Table 4. The results indicated that Set 2 (Emotion-Focused Coping) and Set 3 (Confrontive Coping and Self-Controlling WC scales) accounted for a significant amount of variance for both the stress and burnout indices. Nevertheless, the coping responses were more highly related to stress than to burnout, accounting for 31 percent versus 22 percent of the total variance, respectively. If stress and burnout are considered to be conceptually distinct and measured as such, the findings indicate that coping responses may affect perceived stress more directly than burnout. Finally, Set 1, the problem-focused WC scales, accounted for only one percent of the stress and burnout variance, although the zero-order correlations for several of the problem-focused WC-scales were found to be significantly related to the stress and burnout indices.

As shown in Table 4, the type of coping response was differentially related to the level of reported stress and burnout. Examination of the beta weights indicate that increased use of the emotional-focused coping responses of wishful thinking (Escape-Avoidance) and denial of the situation (Distancing) is related to increased reports of stress and burnout. The size of the beta weights indicate that the Escape-Avoidance scale accounts for considerably more of the stress and burnout variance than the Distancing scale.

A second set of regression analyses were performed in which the three factor-based coping scores were separately regressed onto the stress and burnout scores. The results from these two regression analyses were identical to the prior correlation results in which only the factor of Emotional Expressive Coping was found to be related to the stress and burnout indices. Overall, the correlation and regression results with the factor analytic-based coping scales, when compared to the results with the individual or sets of WC-scales, are not easily explained. The finding that the Emotion-Focused factor was not related to stress and burnout indices was unexpected. One possible explanation is that the Emotion-Focused factor is misnamed and that the third factor--Emotional Expressive Coping--includes the variance from the Distancing and Escape-Avoidance scales most related to the stress and burnout indices.

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Table 1
Means, Standard Deviations, and Intercorrelations
for the Ways of Coping Scales

WC Scale	1	2	3	4	5	6	7	8
1. Confrontive Coping	(.45)							
2. Distancing	.03	(.70)						
3. Self-Controlling	.17	.50	(.59)					
4. Seeking Social Support	.30	.01	.28	(.63)				
5. Accepting Responsibility	.12	.45	.52	.15	(.58)			
6. Escape-Avoidance	.17	.55	.46	.00	.60	(.76)		
7. Planful Problem-Solving	.30	.01	.38	.54	.17	-.05	(.66)	
8. Positive Reappraisal	.18	.12	.44	.51	.34	.09	.46	(.61)
M	6.65	5.84	9.68	8.56	4.60	7.51	9.13	8.79
SD	2.19	2.89	3.07	2.60	2.04	4.27	2.73	3.12

Note. N=133; Coefficient alpha in parenthesis; r's $\geq$ .14 significant at the .05 level.

Table 2
Factor Analysis of WC Items

WC Item	Factor I	Factor II	Factor III	h2
1. Just concentrated on what I had to do next--the next step.	.21	.12	-.15	.08
2. I tried to analyze the problem in order to understand it better.	-.14	.39	-.01	.17
3. Turned to work or substitute activity to take my mind off things.	.29	.05	.04	.09
4. I felt that time would make a difference--the only thing to do was to wait.	.42	.26	.01	.25
5. Bargained or compromised to get something positive from the situation.	.20	.23	.36	.22
6. I did something which I didn't think would work, but at least I was doing something.	.26	-.06	.01	.07
7. Tried to get the person responsible to change his or her mind.	.10	.33	.14	.14
8. Talked to someone to find out more about the situation.	-.26	.43	.24	.31
9. Criticized or lectured myself.	.55	-.03	.12	.32
10. Tried not to burn my bridges, but leave things open somewhat.	.22	.29	.03	.14
11. Hoped a miracle would happen.	.42	-.23	.02	.23
12. Went along with fate; sometimes I just have bad luck.	.61	-.18	.01	.40
13. Went on as if nothing had happened.	.57	-.24	-.03	.38
14. I tried to keep my feelings to myself.	.56	.01	-.17	.34
15. Looked for the silver lining, so to speak; tried to look on the bright side of things.	.41	.23	-.20	.26

WC Item	Factor I	II	III	h2
16. Slept more than usual.	.39	-.14	.20	.21
17. I expressed anger to the person(s) who caused the problem.	-.08	.13	.44	.22
18. Accepted sympathy and understanding from someone.	.22	.35	.34	.29
19. I told myself things that helped me to feel better.	.36	.20	.29	.25
20. I was inspired to do something creative.	-.01	.24	.16	.08
21. Tried to forget the whole thing.	.45	-.01	-.03	.21
22. I got professional help.	.14	-.03	.06	.02
23. Changed or grew as a person in a good way.	-.11	.57	.11	.35
24. I waited to see what would happen before doing anything.	.41	.12	.03	.18
25. I apologized or did something to make up.	.47	.12	.03	.23
26. I made a plan of action and followed it.	-.26	.62	.17	.48
27. I accepted the next best thing to what I wanted.	.34	.25	.13	.19
28. I let my feelings out somehow.	-.17	.09	.44	.23
29. Realized I brought the problem on myself.	.38	.15	.28	.24
30. I came out of the experience better than when I went in.	.17	.58	.00	.36
31. Talked to someone who could do something concrete about the problem.	-.03	.59	.05	.35
32. Got away from it for a while; tried to rest or take a vacation.	.08	-.06	.25	.07
33. Tried to make myself feel better eating, drinking, smoking, using drugs or medication, etc.	.51	-.17	.38	.44

WC Item	Factor I	II	III	h2
34. Took a big chance or did something very risky.	.15	.13	.27	.11
35. I tried not to act too hastily or follow my first hunch.	.19	.22	.17	.11
36. Found new faith.	.21	.22	.00	.09
37. Maintained my pride and kept a stiff upper lip.	.45	.14	-.08	.23
38. Rediscovered what is important in life.	.00	.46	.04	.22
39. Changed something so things would turn out all right.	-.02	.36	.01	.13
40. Avoided being with people in general.	.60	.02	-.02	.36
41. Didn't let it get to me; refused to think too much about it.	.21	.19	-.06	.09
42. I asked a relative or friend I respected for advice.	.12	.58	.07	.36
43. Kept others from knowing how bad things were.	.55	.03	-.17	.33
44. Made light of the situation; refused to get too serious about it.	.52	.06	.02	.27
45. Talked to someone about how I was feeling.	-.11	.40	.27	.25
46. Stood my ground and fought for what I wanted.	-.15	.29	.38	.26
47. Took it out on other people.	.44	-.03	.49	.44
48. Drew on my past experiences; I was in a similar situation before.	.00	.52	.22	.32
49. I knew what had to be done, so I doubled my efforts to make things work.	.09	.53	-.09	.30
50. Refused to believe that it had happened.	.46	.02	.07	.21

WC Item	Factor I	Factor II	Factor III	h2
51. I made a promise to myself that things would be different next time.	.50	.23	.10	.32
52. Came up with a couple of different solutions to the problem.	.04	.74	.06	.55
53. Accepted it, since nothing could be done.	.51	-.09	-.18	.30
54. I tried to keep my feelings from interfering with other things too much.	.25	.21	-.27	.18
55. Wished that I could change what had happened or how I felt.	.65	.01	-.07	.43
56. I changed something about myself.	.38	.24	-.24	.26
57. I daydreamed or imagined a better time or place than the one I was in.	.56	.11	.06	.33
58. Wished that the situation would go away or somehow be over with.	.69	.04	.01	.48
59. Had fantasies or wishes about how things might turn out.	.61	.05	.08	.38
60. I prayed.	.24	.35	-.08	.19
61. I prepared myself for the worst.	.37	.16	.23	.22
62. I went over in my mind what I would say or do.	.19	.54	.38	.47
63. I thought about how a person I admire would handle this situation and used that as a model.	.32	.45	.06	.31
64. I tried to see things from the other person's point of view.	.27	.47	-.10	.31
65. I reminded myself how much worse things could be.	.45	.13	.08	.22
66. I jogged or exercised.	-.01	.06	.09	.01
% Total Variation	14.80	9.70	4.20	28.70
% Common Variation	53.80	34.10	12.10	
Eigenvalues	9.77	6.41	2.77	

Note. N=133. Factor loadings> .40 underlined.

Table 3
Correlations of the Ways of Coping (WC) Scales with the
Job Involvement, Role Conflict, Stress and Burnout Indices

WC Scale	INV	HW	RC	JTI	EXS
Confrontive Coping	.02	.00	.14*	.18*	.09
Distancing	.07	.24**	.39**	.34**	.27**
Self-Controlling	.18*	.04	.14	.10	-.02
Seeking Social Support	.15*	.03	-.03	-.11	-.12
Accepting Responsibility	.25**	.21**	.15*	.16*	.15*
Escape-Avoidance	.14	.44**	.43**	.47**	.35**
Planful Problem-Solving	.15*	.11	-.18*	-.17*	-.22**
Positive Reappraisal	.21**	-.09	-.07	-.04	-.07
Factor I (Emotion-Focused)	-.12	.14	.08	.09	.15*
Factor II (Problem-Focused)	.13	.03	.02	-.02	-.05
Factor III (Emotional Expressive)	-.02	-.38**	-.43**	-.47**	-.40**
M	23.50	11.56	11.74	44.85	27.32
SD	6.16	4.03	3.52	10.37	10.80

Note. N varies from 130 to 133. Abbreviations: Job Involvement scale (INV), Home-Work scale (HW), Role Conflict Scale (RC), Job-Related Tension Index (JTI), and Emotional Exhaustion scale (EXS).

Table 4
Regression of Stress and Burnout Indices on the Ways of Coping Scales

WC SCALE	JTI			EXS		
	R^2	F	Beta	R^2	F	Beta
Set 1 (Problem-Focused)	.02	1.00		.02	.91	
Planful Problem-Solving			-.11			-.14
Seeking Social Support			-.08			-.04
Positive Reappraisal			.07			.04
Set 2 (Emotion-Focused)	.19	11.33**		.14	7.18**	
Distancing			.20*			.24*
Accepting Responsibility			-.16			-.01
Escape-Avoidance			.47**			.31**
Set 3	.04	3.29*		.04	3.36*	
Confrontive Coping			.18*			.12
Self-Controlling			-.13			-.25*
Total Set	.31	6.99**		.22	4.30**	

Note. Abbreviations: Job-Related Tension Index (JTI) and Emotional Exhaustion Scale (EXS).

*$p \leq .05$ **$p \leq .01$